

SEMICONDUCTOR DEVICE AND ITS MANUFACTURE

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- H01L-029/78
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JAPIO Class:

- 42.2 (ELECTRONICS--- Solid State Components)

JAPIO Keywords:

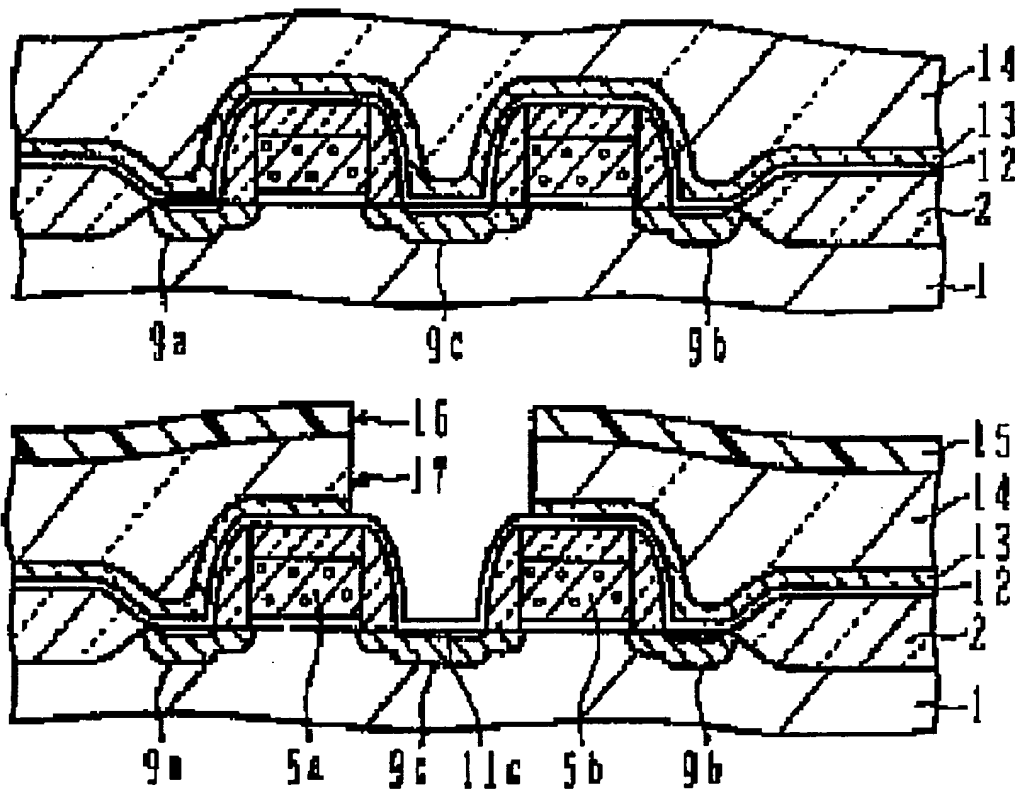
- R004 (PLASMA)
- R097 (ELECTRONIC MATERIALS--- Metal Oxide Semiconductors, MOS)
- R100 (ELECTRONIC MATERIALS--- Ion Implantation)

Abstract:

PROBLEM TO BE SOLVED: To automatically stop etching in a surface of a second insulation layer by forming a second insulation layer consisting of metallic oxide whose boiling point of metallic fluoride is specific in a region wherewith a conductive layer is not in contact in a region on a surface of a first insulation layer.

SOLUTION: An etching stopping layer 12 consisting of cobalt oxide (metallic oxide whose boiling point is 250 deg.C or higher), an SiN protection layer 13 and a layer insulation film 14 consisting of SiO (sub 2) are laminated in order all over a substrate 1. A resist film 15 is applied to a surface of the layer insulation film 14 and an opening 16 is formed. The layer insulation film 14 is etched by an anisotropic RIE using mixture gas of C(sub 4)F(sub 8) and CO, etc., as etching gas by using the resist 15 as an etching mask. Since the RIE wherein the etching gas is used, etching selection ratio of SiO(sub 2) to SiN is high, etching can be automatically stopped in a surface of the etching stopping layer 12.

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JAPIO

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